Step by Step: Extending SAP Access Control with SAP Fiori Applications

Vyacheslav (Slava) Plyushchikov
Advanced View Computer Technologies

In This Session

- Step-by-step process of:
  - Planning Fiori apps enhancements
  - Deploying Web IDE
  - Extending GRC Access Control Fiori apps
  - Tracing and debugging Fiori app front end
  - Testing and debugging OData calls
  - Tips and tricks of deploying extended Fiori apps

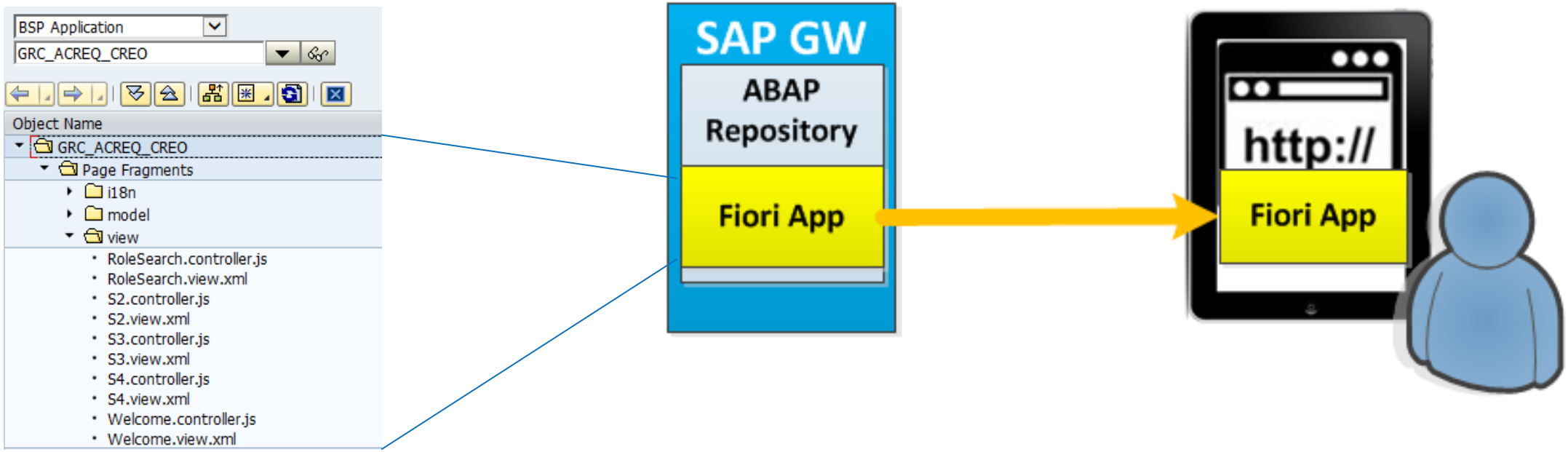
Source: SAP

What We'll Cover

- GRC Access Control Fiori overview
- Business scenario for Fiori app extension
- Implementation: IDE setup
- Implementation: Fiori extension project
- Tracing and debugging
- Deployment
- Tips and tricks
- Wrap-up

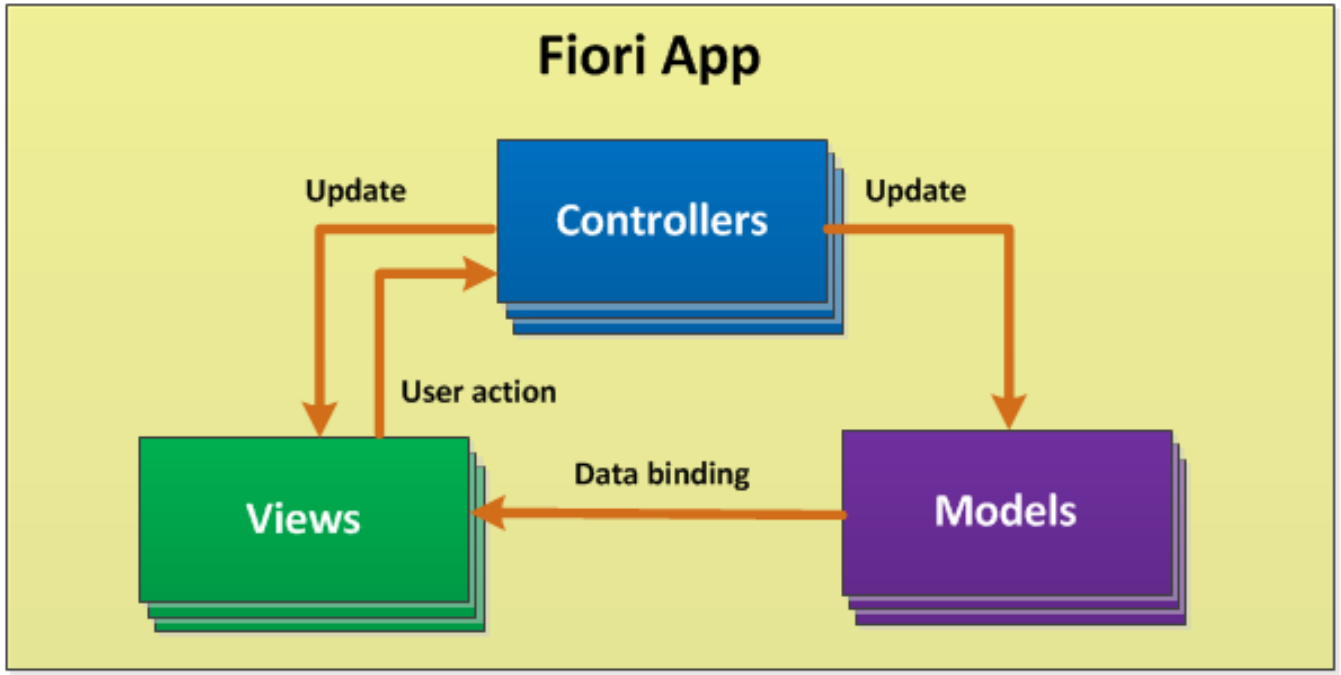
SAP Fiori: Technology

- Technology is based on HTML5/SAPUI5
- Fiori app resides in the ABAP repository as BSP application
- When executed, entire Fiori app is transferred to the HTML5-compatible web browser



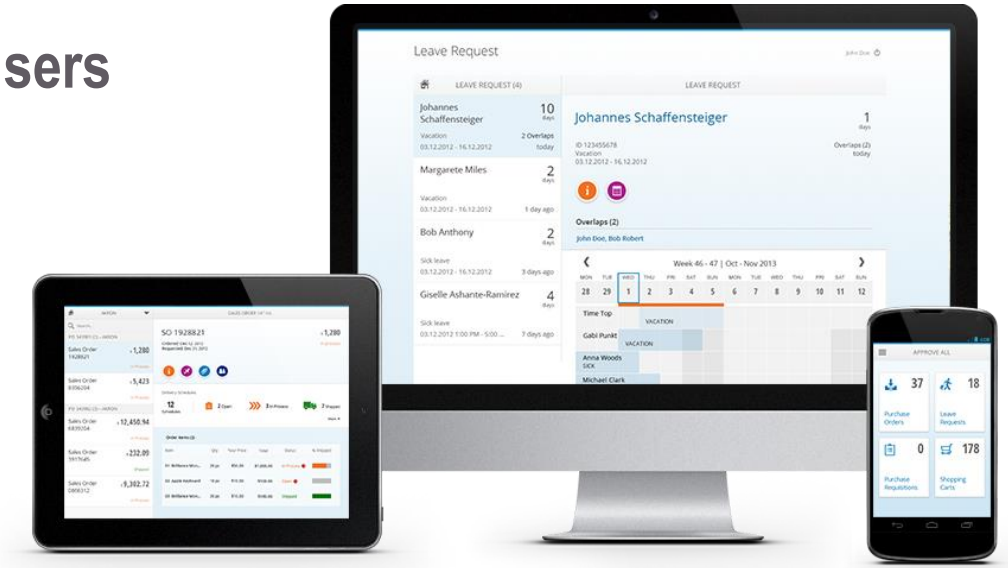
SAP Fiori: Technology (cont.)

- Model-View-Controller (MVC) concept
  - Separation between data presentation (view), flow logic (controller), and data persistence (model)
  - Better code reuse: change to one component does not affect other components



SAP Fiori: Benefits

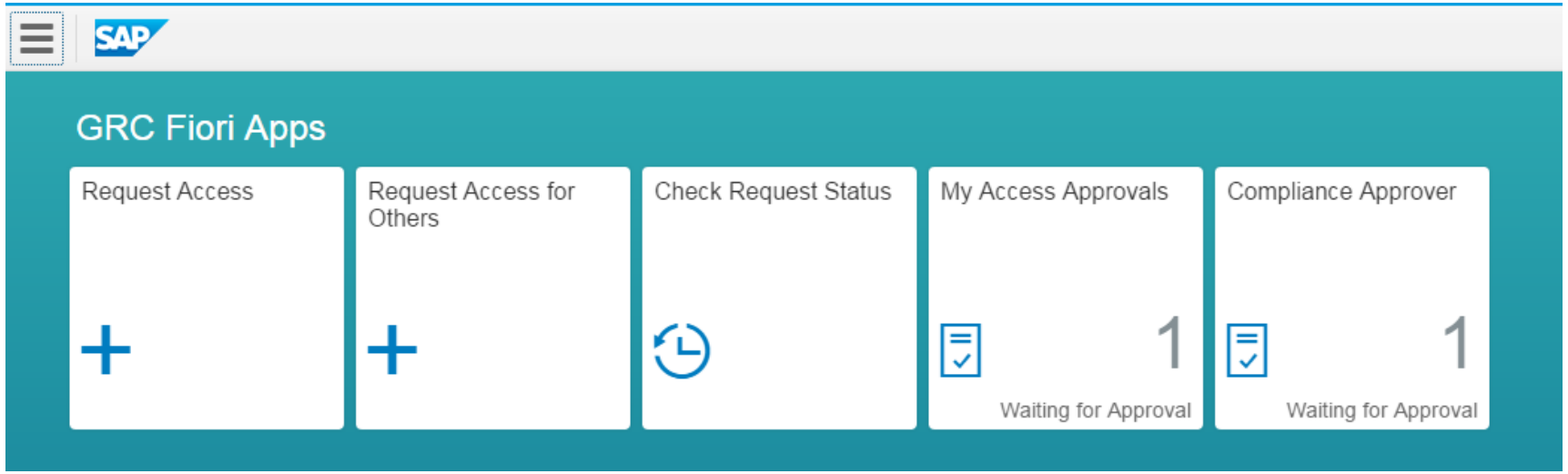
- Supported across multiple platforms, including mobile devices
  - Any device with HTML5-compatible browser can be used
- Requires zero footprint on the user device
  - No application deployment: entire app is loaded to the browser during the call
- Easy maintenance and support
  - Update on the server immediately available to all users



Source: SAP

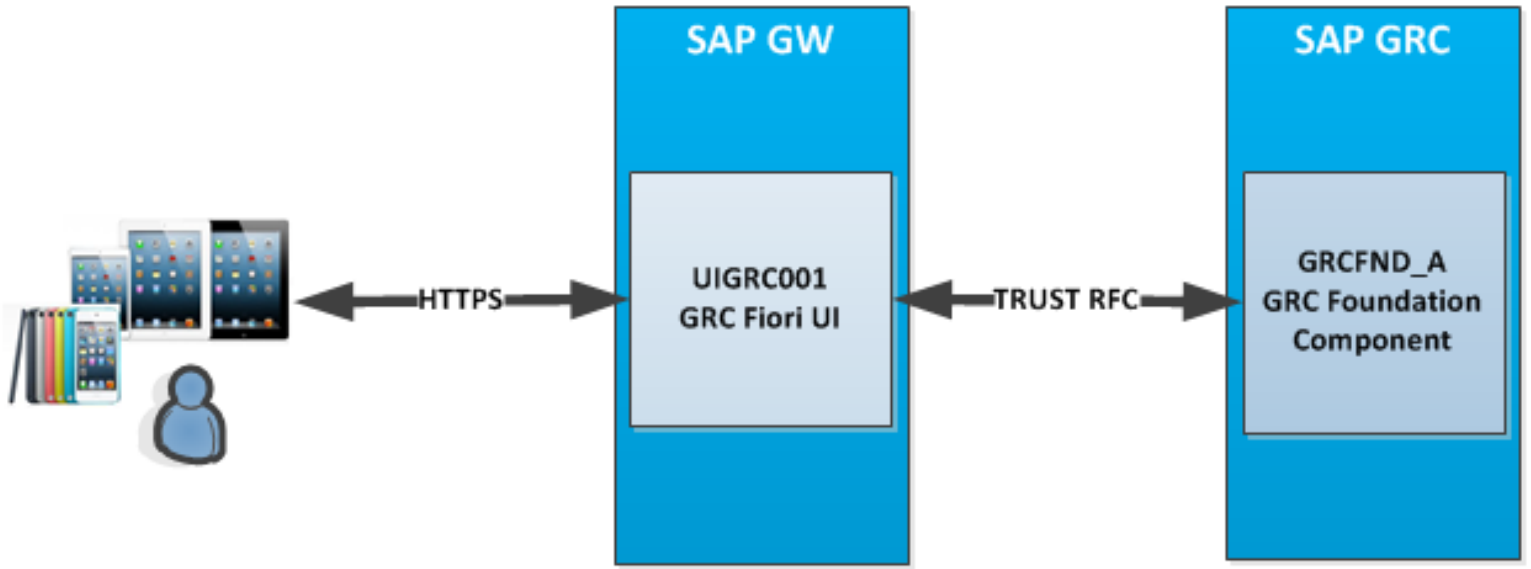
SAP GRC AC Fiori Suite

- Out-of-the-box transactional Fiori apps:
  - Request Access
  - Request Access for Others
  - Check Request Status
  - My Access Approvals
  - Compliance Approver



SAP GRC AC Fiori Suite (cont.)

- Front-end Component UIGRC001 is deployed on SAP Gateway
- Back-end OData services delivered in GRCFND_A on SAP GRC Server

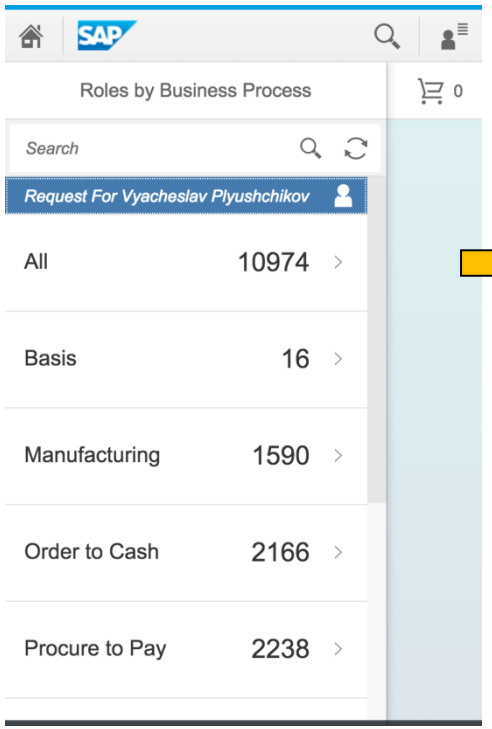


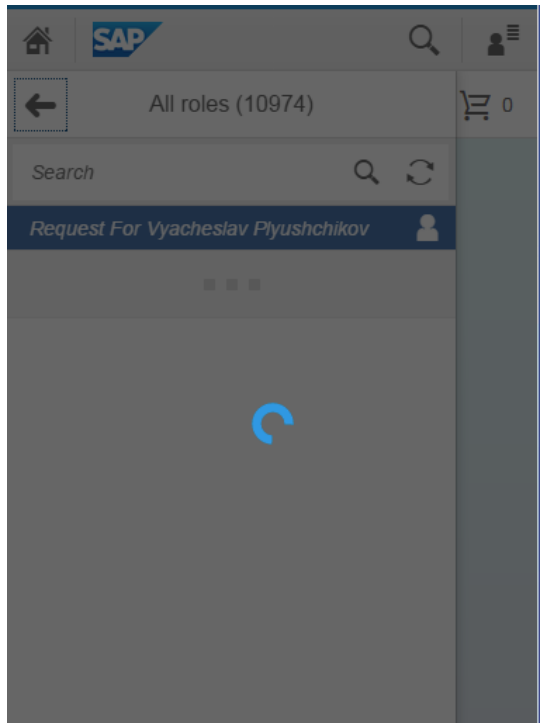
What We'll Cover

- GRC Access Control Fiori overview
- Business scenario for Fiori app extension
- Implementation: IDE setup
- Implementation: Fiori extension project
- Tracing and debugging
- Deployment
- Tips and tricks
- Wrap-up

Business Scenario for Fiori Extension

- Issue with access request creation:
  - Company Role Catalog does not fit into out-of-the-box Fiori app functionality
    - Users cannot efficiently select roles
    - Performance issue due to large number of entries returned





Problem

Large number of roles, long wait time

Business Scenario for Fiori Extension (cont.)

- Standard app allows search only by business process or role keyword
- Company role catalog is based on employee geographical location and job function

Business Process	Role Count
PTP	2K roles
OTC	3K roles
RTR	...K roles
...	...

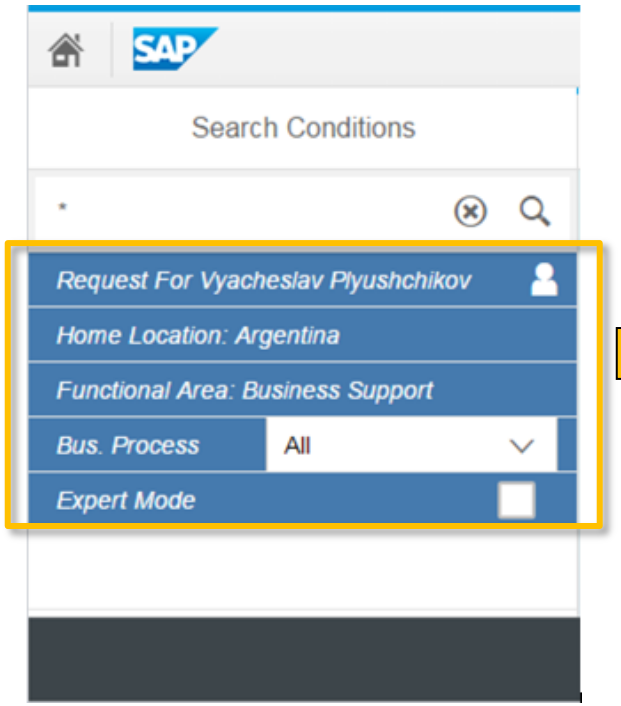
Each Business processes many roles. It is difficult to find the correct one.

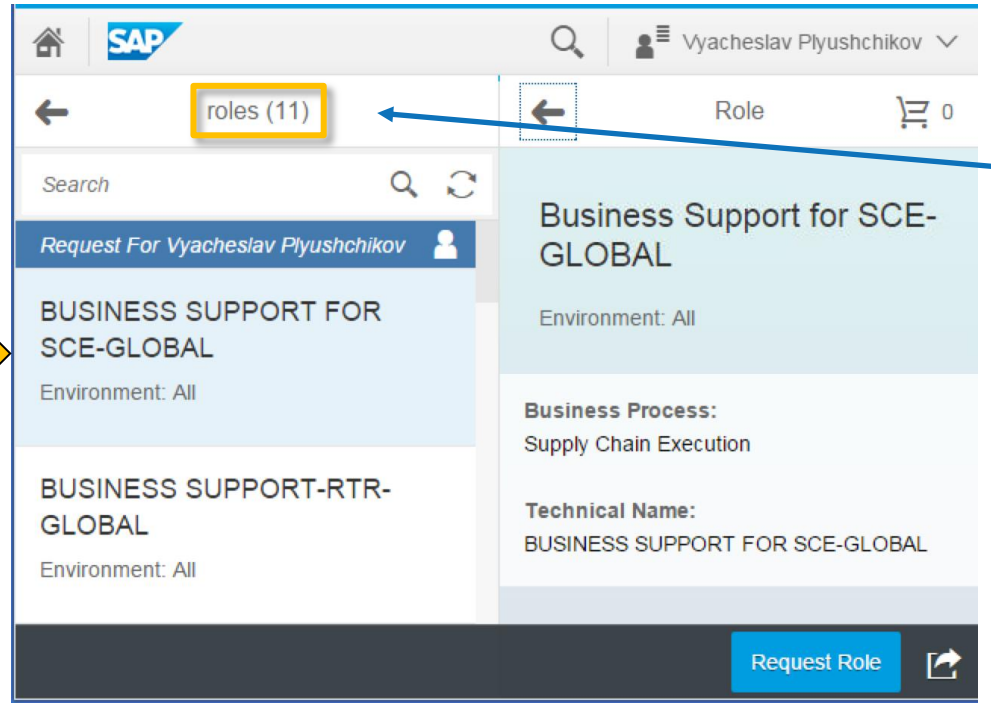
Location	Job	Role Count
Argentina	Affiliate	5 roles
	Logistics	10 roles
	Tax	7 roles
	Treasury	5 roles
	...	...
Brazil	Accounting	3 roles
	Affiliate	5 roles
	Logistics	3 roles
	Tax	7 roles
	...	...
...	...	...
...	...	...

With additional filtering by Location and Job, number of roles to choose becomes reasonable

Business Scenario for Fiori Extension (cont.)

- Solution: Extend “Request Access for Others” app
  - Add required search fields
  - Allow “Expert” mode for Super Users





Now only 11 roles are returned. Easy for user to choose from.

Demo: Extended Fiori App

Extended Fiori App in Action: Request Access for Other

What We'll Cover

- GRC Access Control Fiori overview
- Business scenario for Fiori app extension
- Implementation: IDE setup
- Implementation: Fiori extension project
- Tracing and debugging
- Deployment
- Tips and tricks
- Wrap-up

IDE Setup

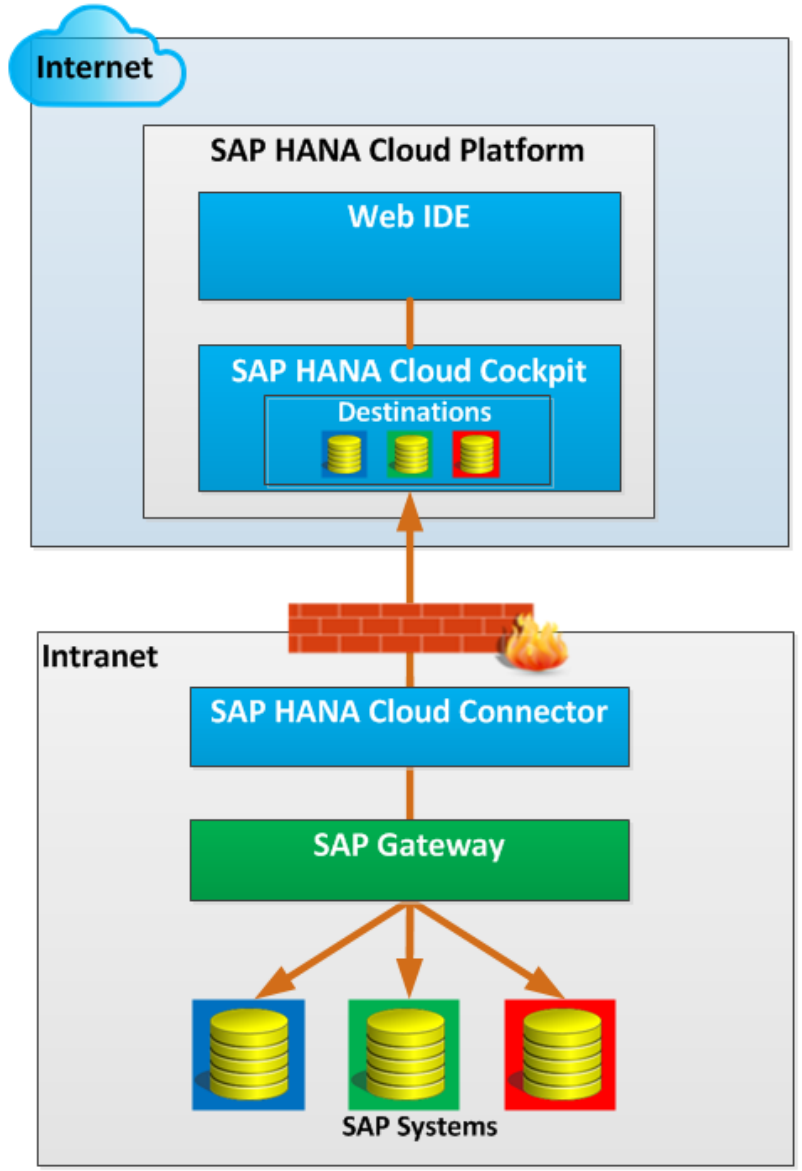
- Option 1: Cloud/SAP HCP
  - SAP Web IDE hosted on SAP HCP
  - Free trial option and subscription-based option

VS.

- Option 2: Local Web IDE installation
  - Installed locally on Windows Workstation
  - Free trial version of Web IDE 1.12

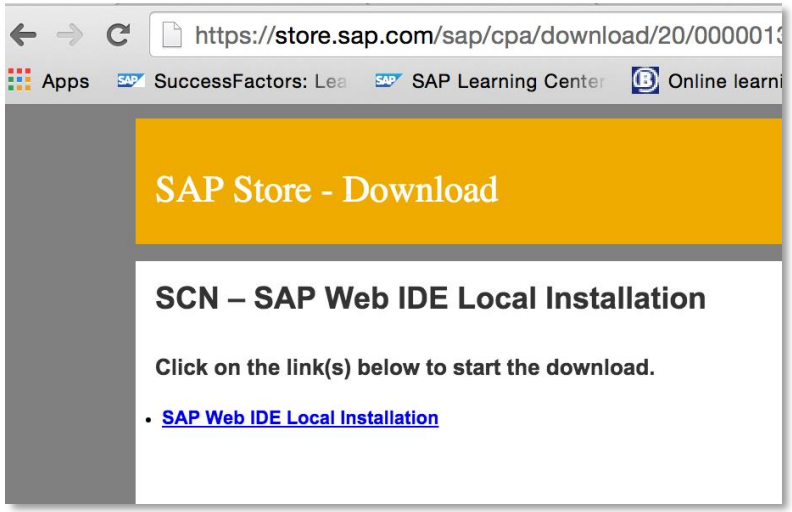
IDE Setup (cont.)

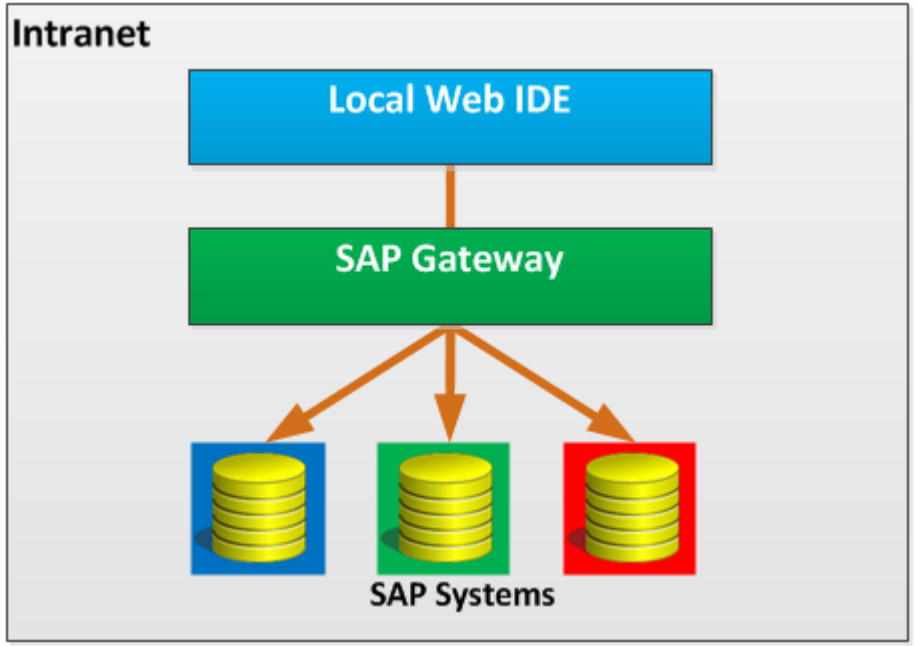
- Option 1: Cloud/SAP HCP
  - Pros
    - No maintenance required, always latest version
    - No license cost (for SAP system connections)
    - Fiori apps can be hosted in the cloud
    - Generates Component-preload.js
  - Cons
    - Requires SAP HANA Cloud Connector
    - May be slower compared to local installation
- Register at: https://account.hanatrial.ondemand.com/



IDE Setup (cont.)

- Option 2: Local Web IDE installation
  - Pros
    - Installed locally on Windows Local
    - Free, no licensing cost
  - Cons:
    - No updates so far after SAP Web IDE 1.12





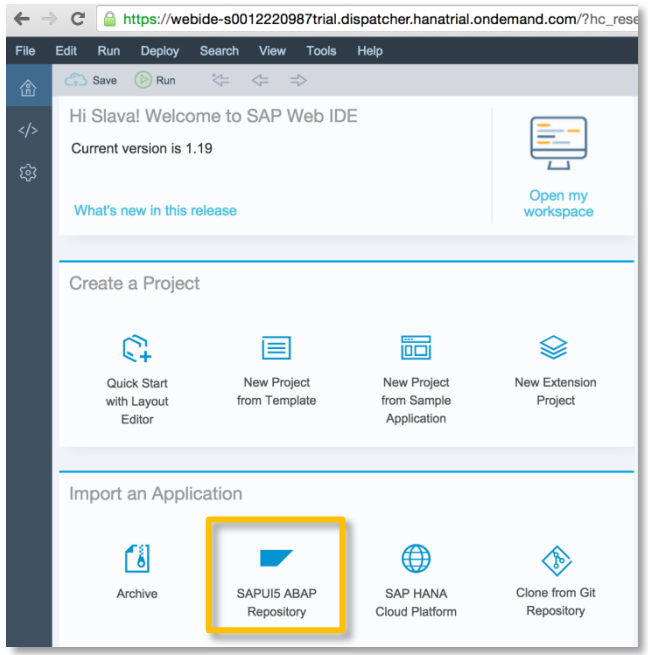
Do not use Fiori Toolkit for Eclipse, it is deprecated!

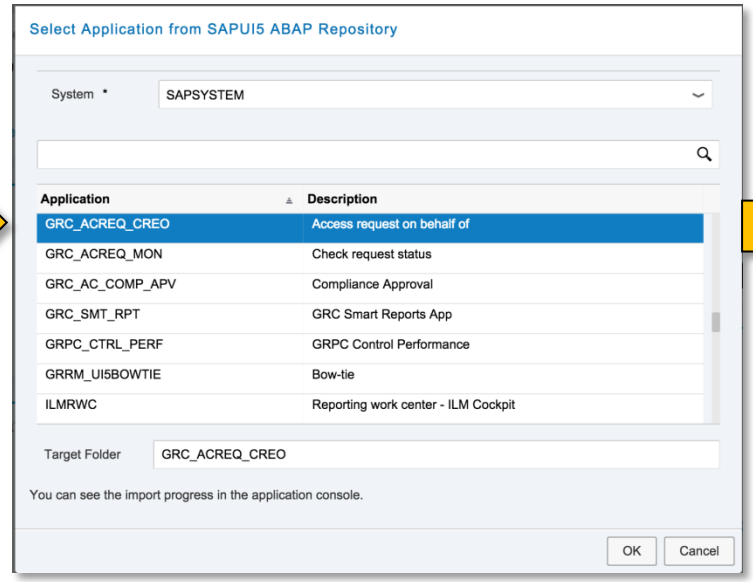
What We'll Cover

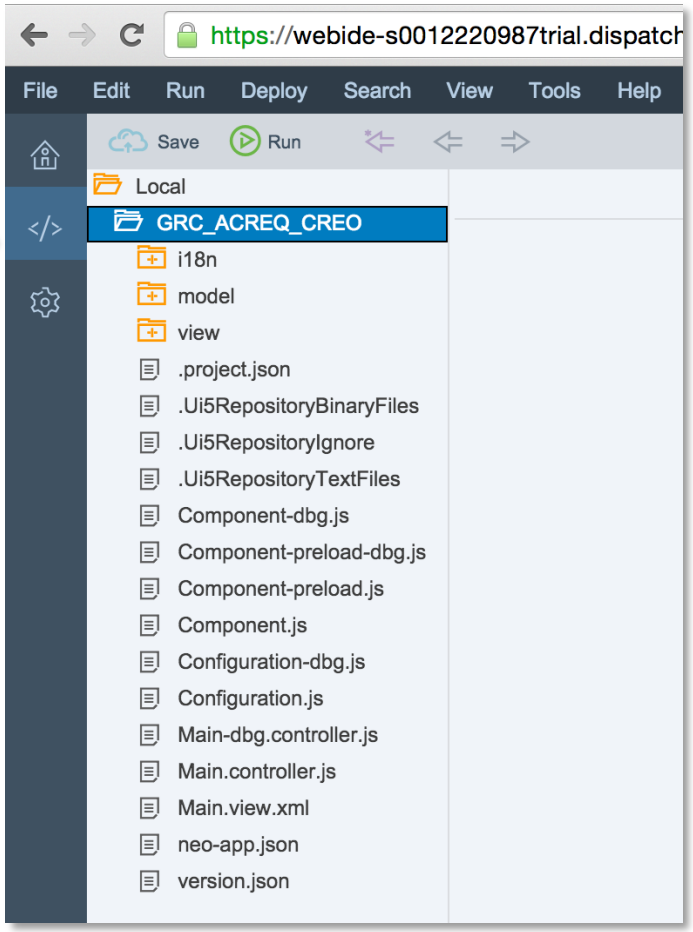
- GRC Access Control Fiori overview
- Business scenario for Fiori app extension
- Implementation: IDE setup
- Implementation: Fiori extension project
- Tracing and debugging
- Deployment
- Tips and tricks
- Wrap-up

Extending Fiori App

- Import original Fiori app

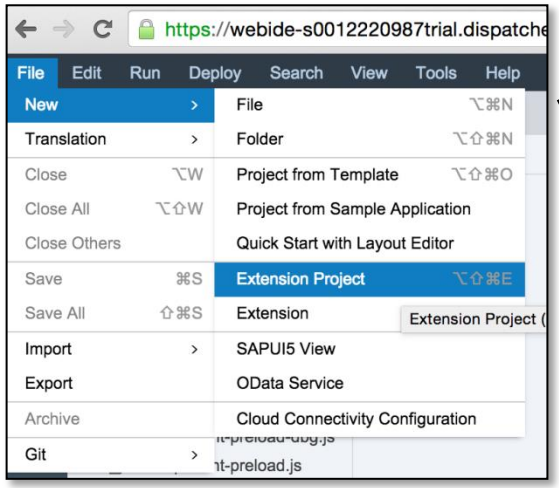


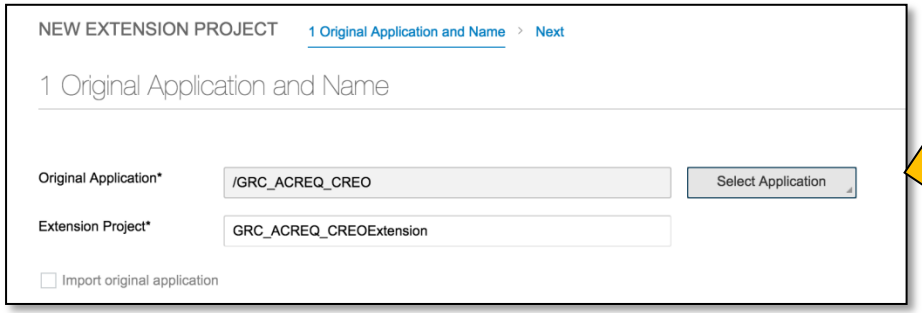


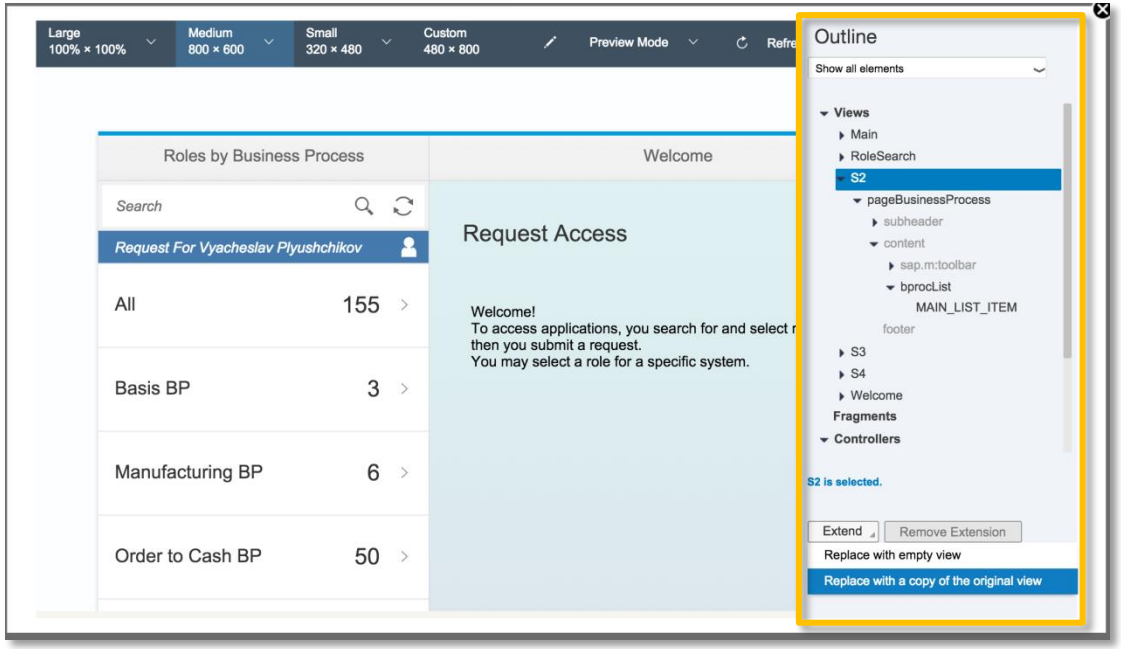


Extending Fiori App (cont.)

- Create Extension project

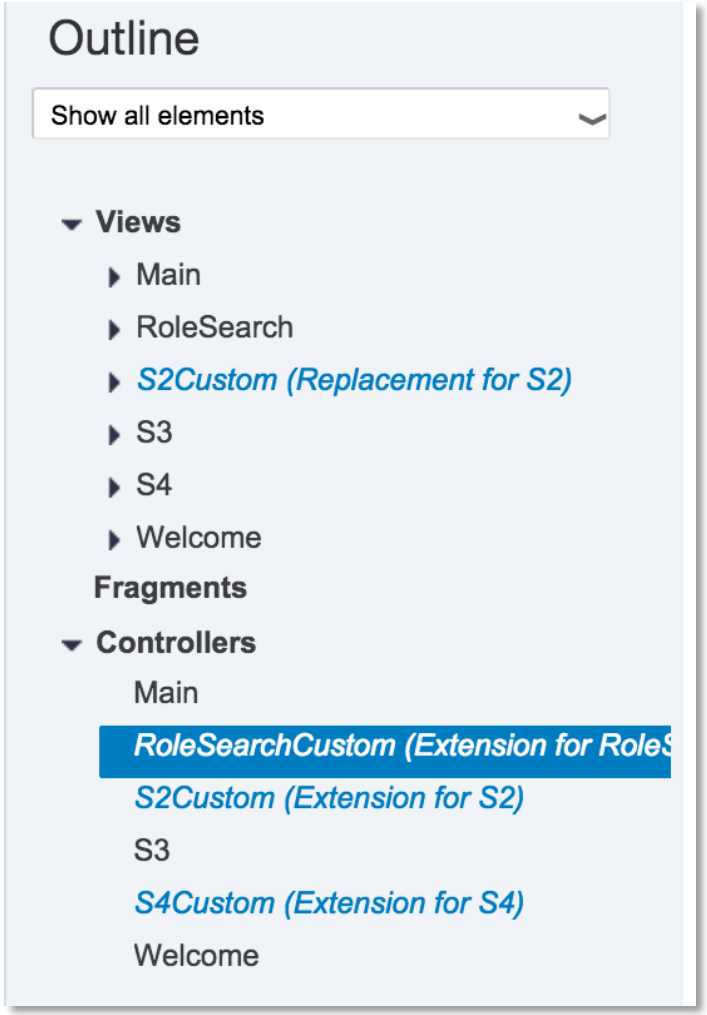






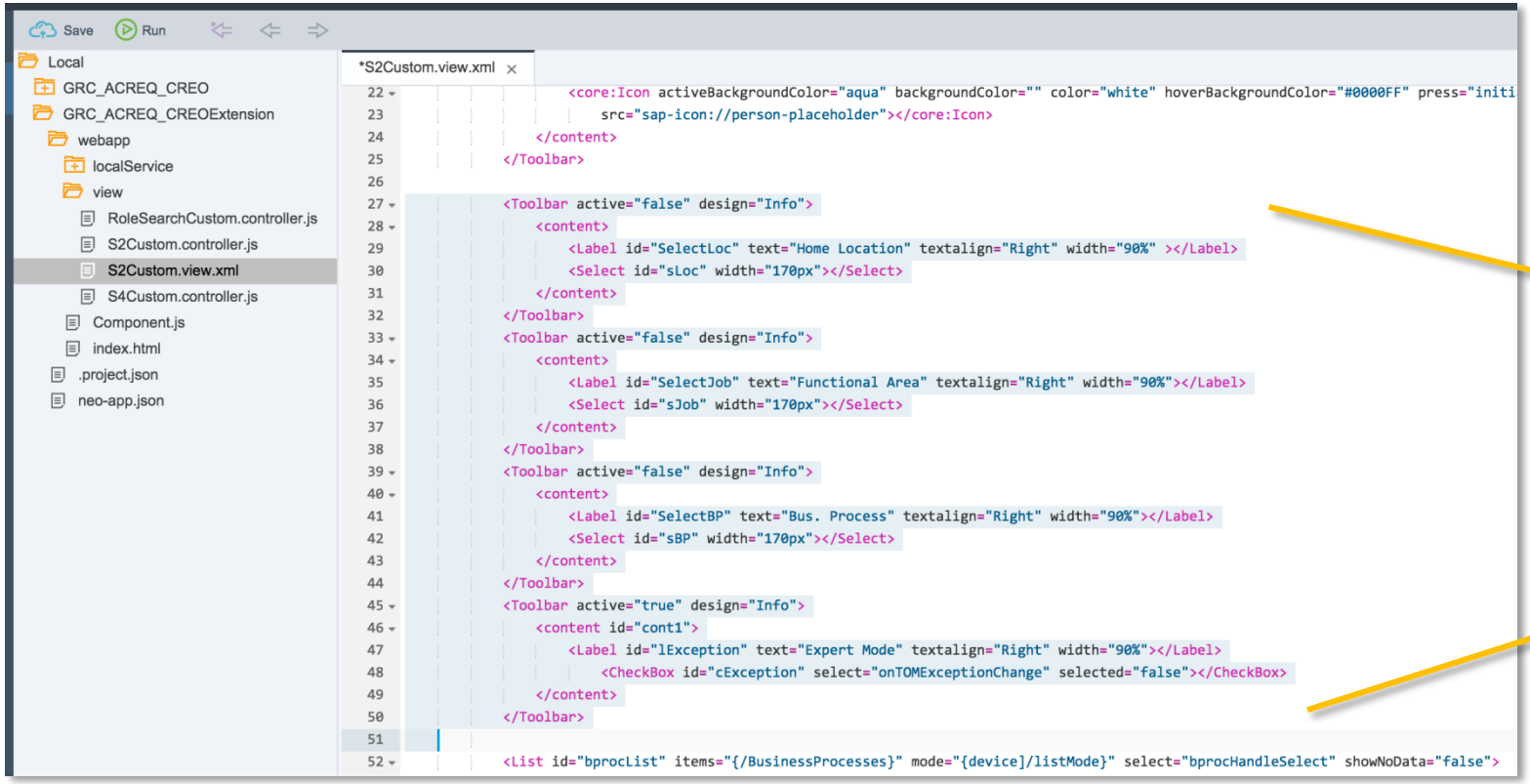
Extending Fiori App (cont.)

- Extend only views and controllers that need to be changed
- For Business Case we extended:
  - View S2: adding search filters
  - Controller S2: fill in search filters
  - Controller RoleSearch: send filter criteria to GRC
  - Controller S4: hide extra custom fields



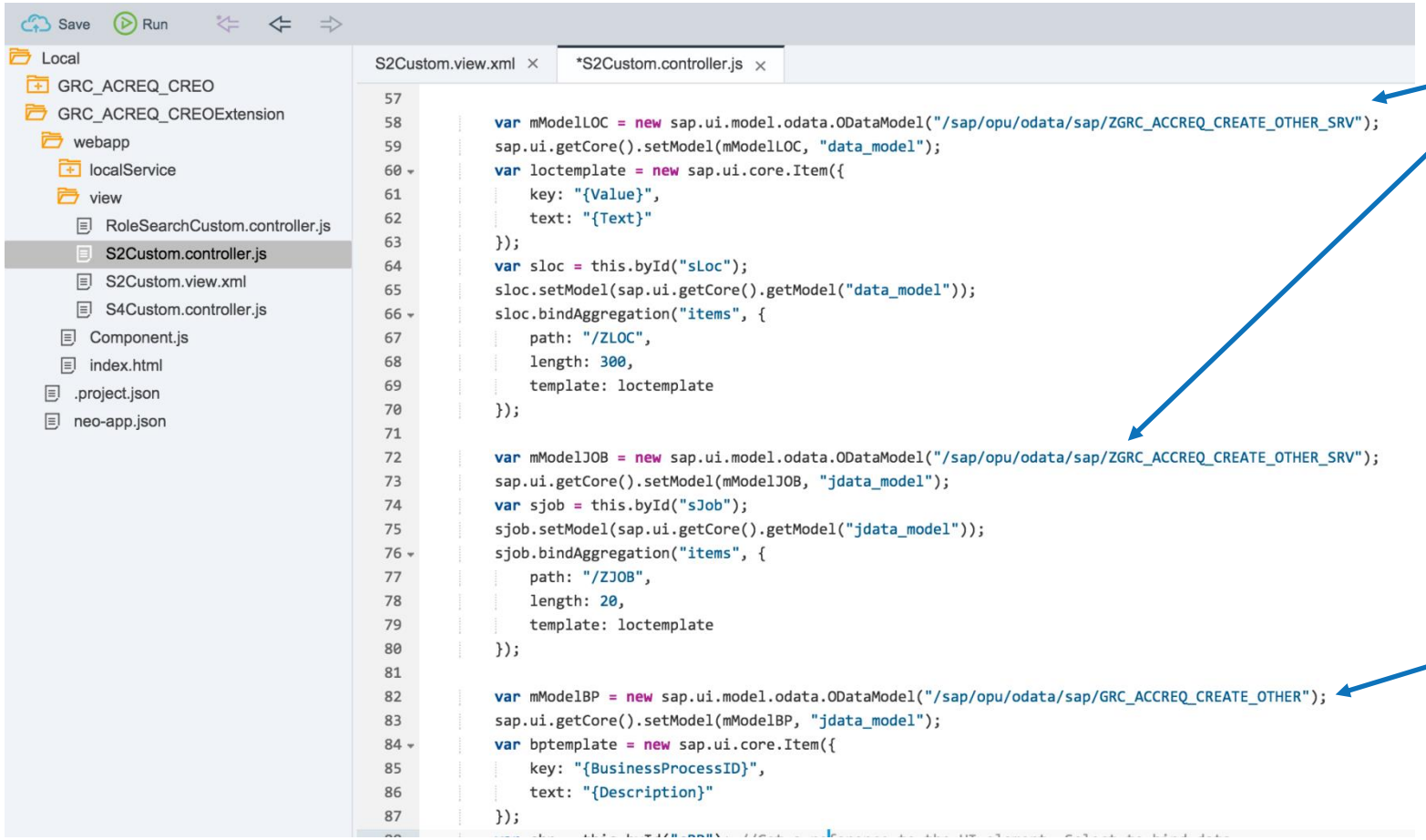
Extending Fiori App (cont.)

- Add Needed UI Elements to S2:



Extending Fiori App (cont.)

- Add logic to controller S2:

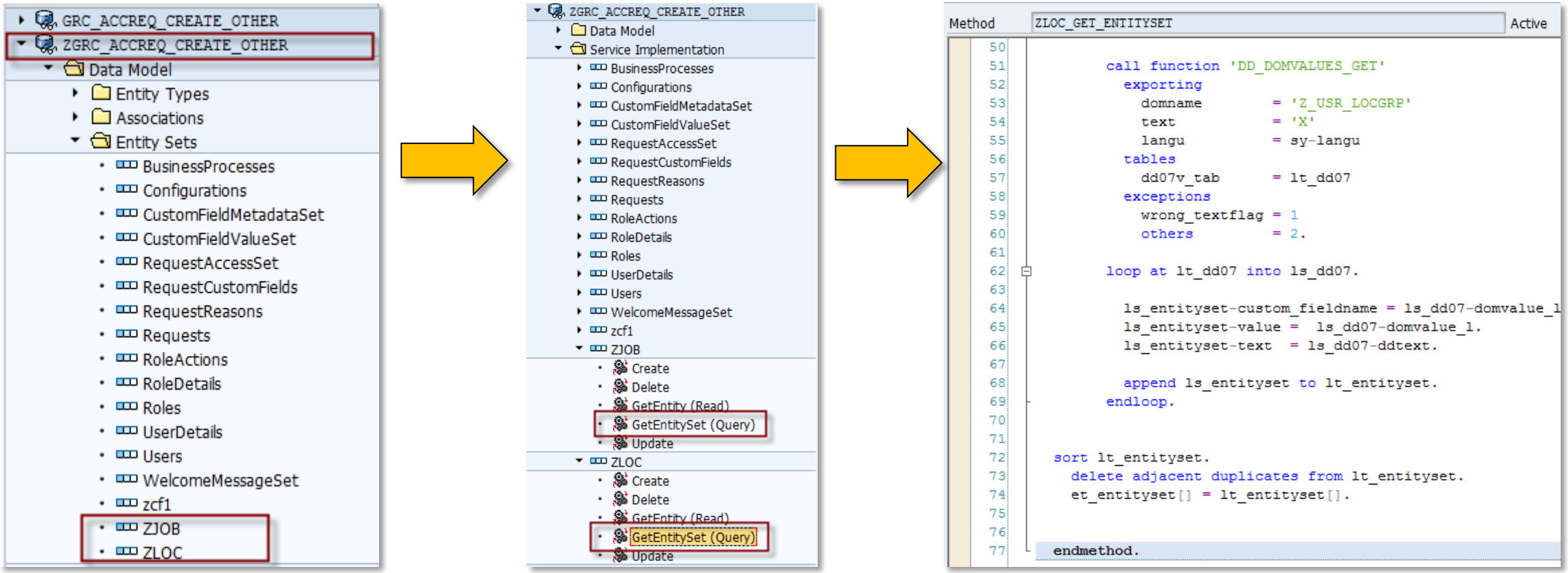


Build custom "Z" OData Services where required

… or reuse standard OData Services

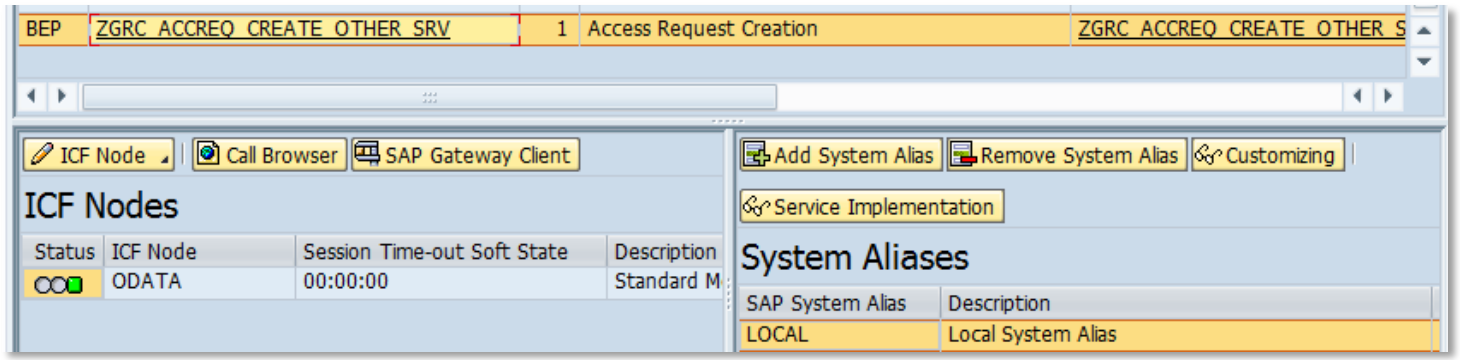
Extending OData Services

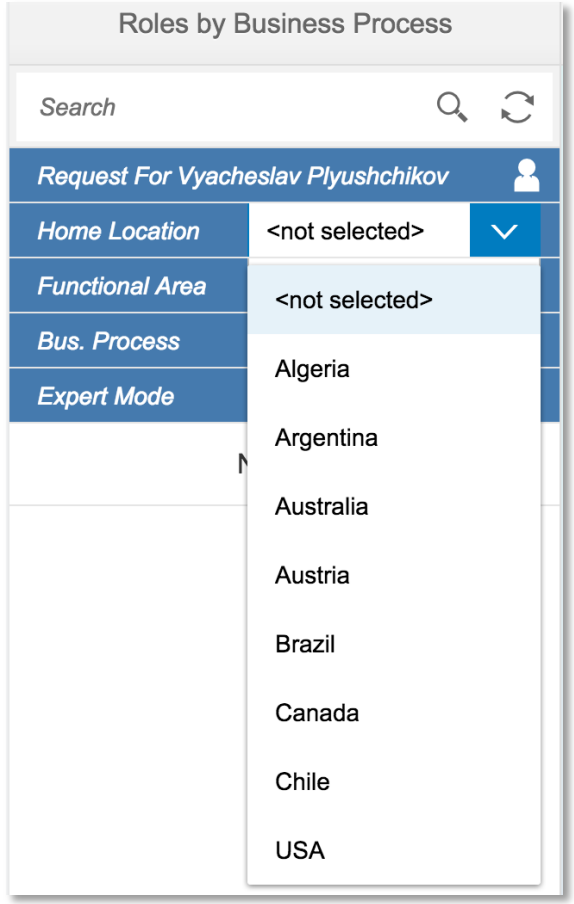
- Transaction SEGW
  - Copy original OData Service and extend the copy



Extending OData Services (cont.)

- Transaction /IWFND/MAINT_SERVICE
  - Register OData service, maintain ICF node and system alias



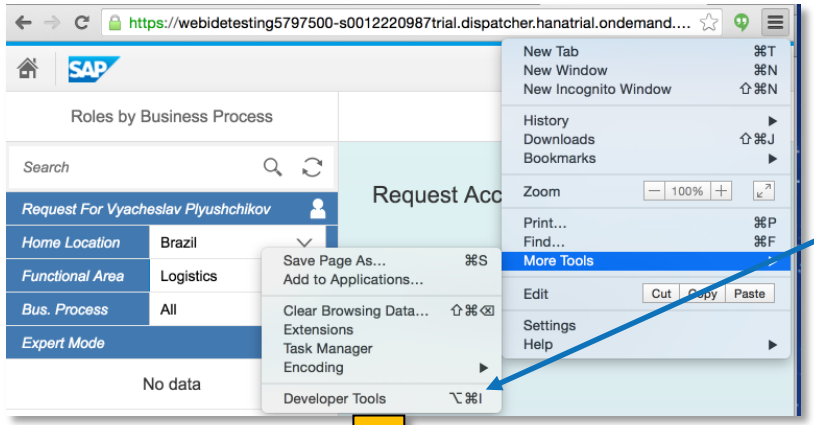


What We'll Cover

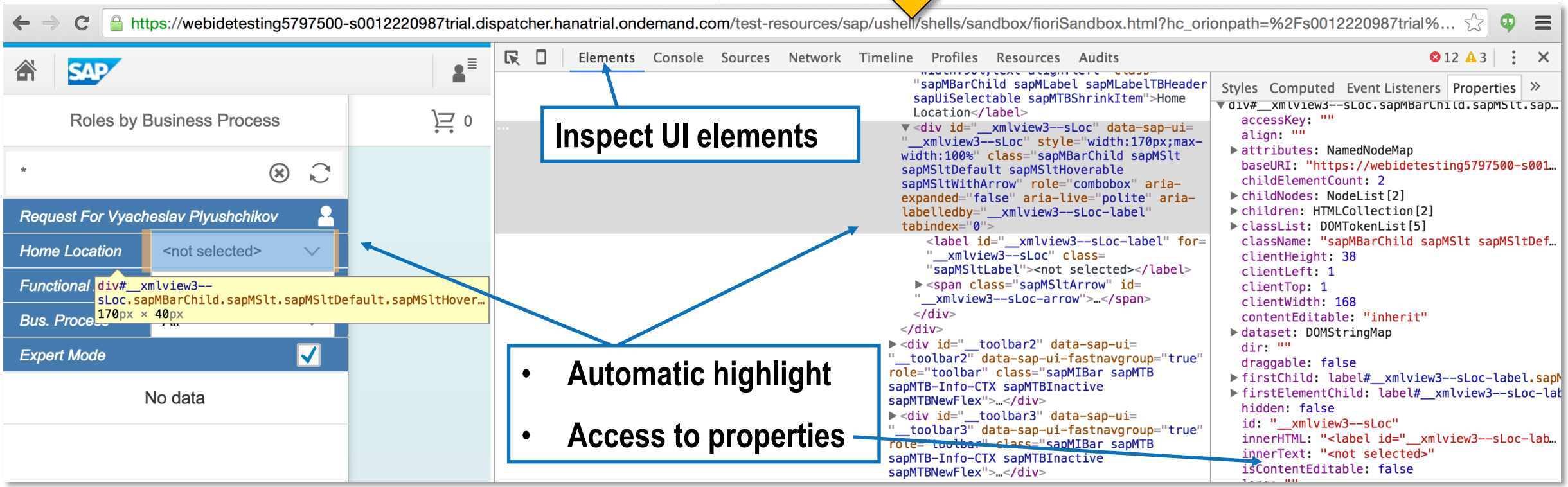
- GRC Access Control Fiori overview
- Business scenario for Fiori app extension
- Implementation: IDE setup
- Implementation: Fiori extension project
- Tracing and debugging
- Deployment
- Tips and tricks
- Wrap-up

Debugging in Web Browser

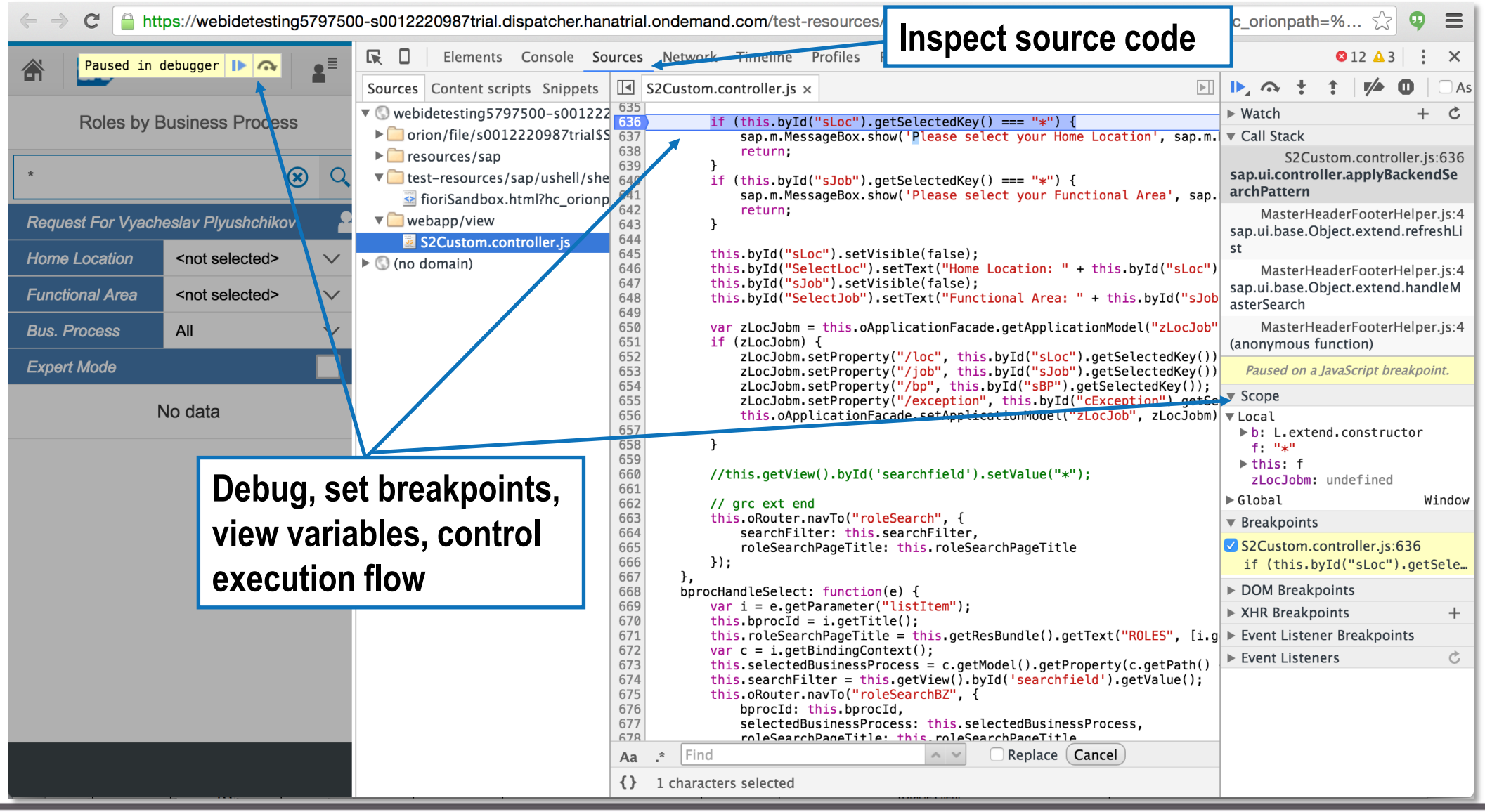
- Chrome is recommended for HTML5/Fiori development



Start developer tools in the browser



Debugging in Web Browser (cont.)

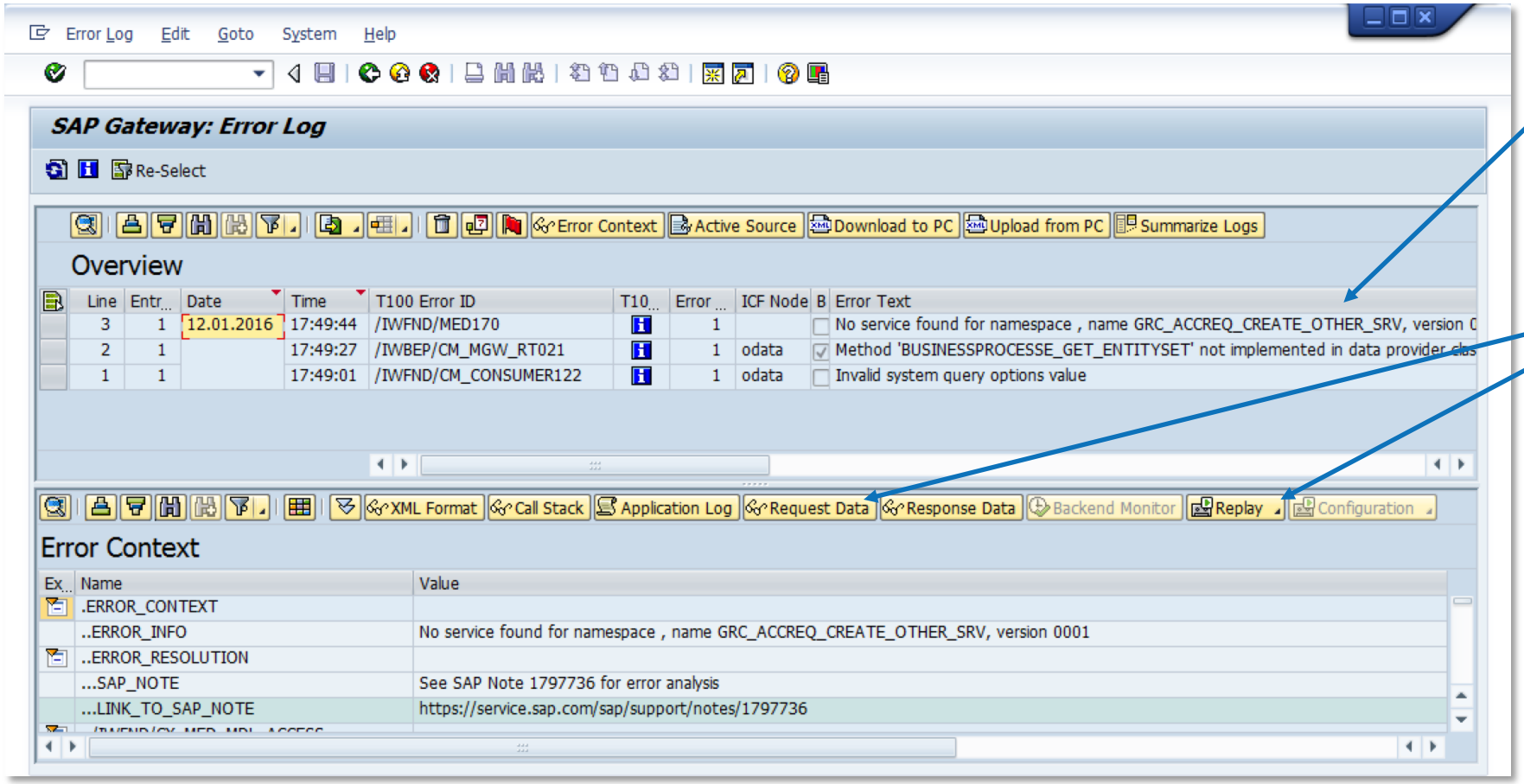


Tracing OData Calls

- User SAP Gateway tools
  - /IWFND/ERROR_LOG
    - Gateway error log: records errors for calls to SAP GW
  - /IWFND/TRACES
    - Gateway call traces: performance and payload traces
  - /IWFND/GW_CLIENT
    - SAP Gateway Client: analyze and repeat calls

Gateway Error Log

- First log to check if calls are failing

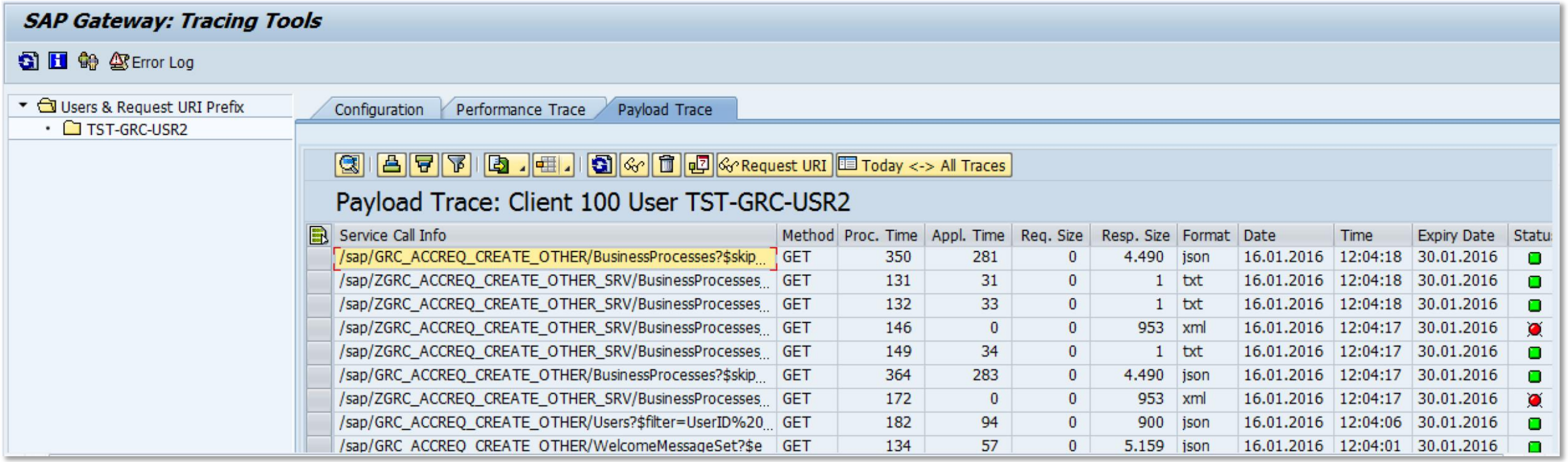


Review error log

Analyze the call, replay if required

Gateway Traces

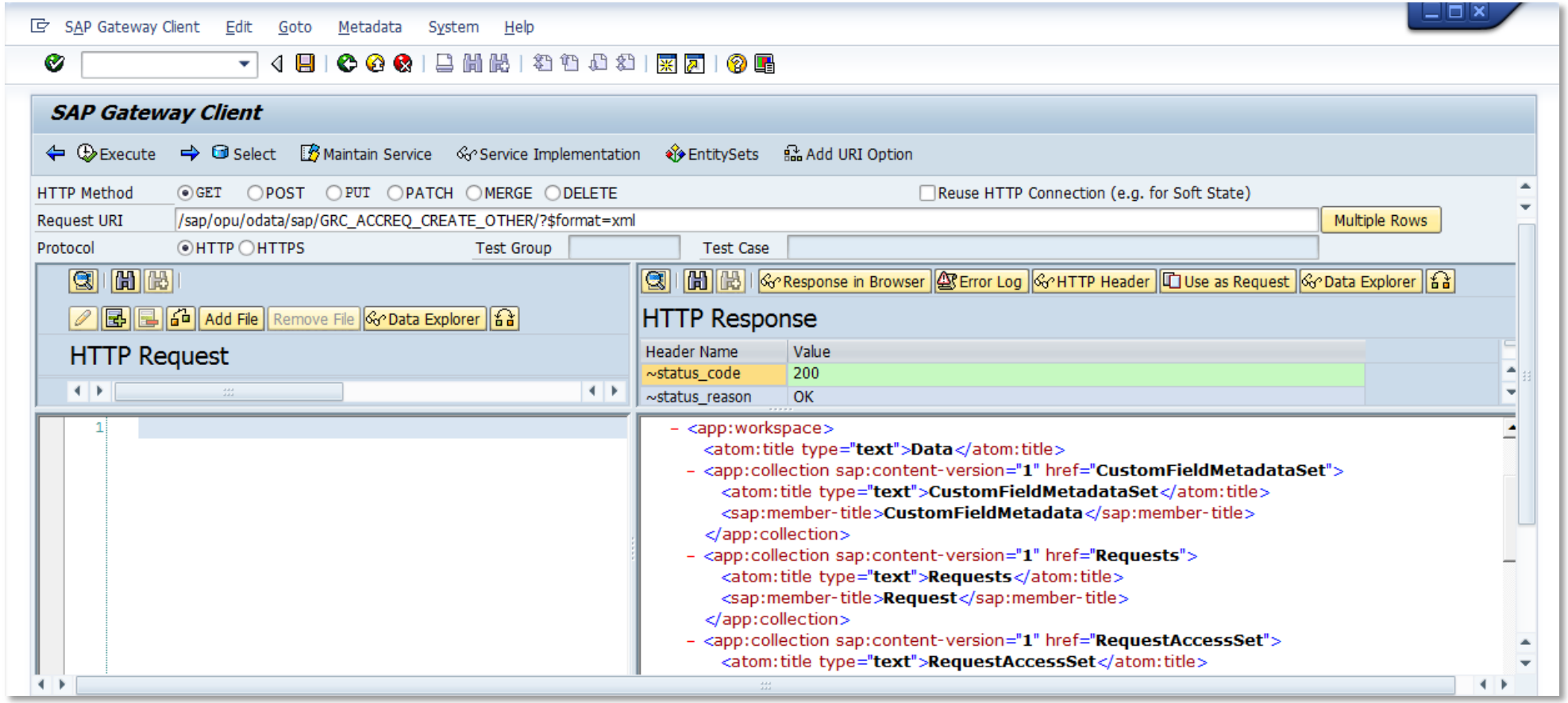
- Analyze OData calls
- Review performance trace
- Replay calls to troubleshoot/debug issues



Service Call Info	Method	Proc. Time	Appl. Time	Req. Size	Resp. Size	Format	Date	Time	Expiry Date	Statu
/sap/GRC_ACCREQ_CREATE_OTHER/BusinessProcesses?$skip...	GET	350	281	0	4.490	json	16.01.2016	12:04:18	30.01.2016	
/sap/ZGRC_ACCREQ_CREATE_OTHER_SRV/BusinessProcesses...	GET	131	31	0	1	txt	16.01.2016	12:04:18	30.01.2016	
/sap/ZGRC_ACCREQ_CREATE_OTHER_SRV/BusinessProcesses...	GET	132	33	0	1	txt	16.01.2016	12:04:18	30.01.2016	
/sap/ZGRC_ACCREQ_CREATE_OTHER_SRV/BusinessProcesses...	GET	146	0	0	953	xml	16.01.2016	12:04:17	30.01.2016	
/sap/ZGRC_ACCREQ_CREATE_OTHER_SRV/BusinessProcesses...	GET	149	34	0	1	txt	16.01.2016	12:04:17	30.01.2016	
/sap/GRC_ACCREQ_CREATE_OTHER/BusinessProcesses?$skip...	GET	364	283	0	4.490	json	16.01.2016	12:04:17	30.01.2016	
/sap/ZGRC_ACCREQ_CREATE_OTHER_SRV/BusinessProcesses...	GET	172	0	0	953	xml	16.01.2016	12:04:17	30.01.2016	
/sap/GRC_ACCREQ_CREATE_OTHER/Users?$filter=UserID%20...	GET	182	94	0	900	json	16.01.2016	12:04:06	30.01.2016	
/sap/GRC_ACCREQ_CREATE_OTHER/WelcomeMessageSet?$e	GET	134	57	0	5.159	json	16.01.2016	12:04:01	30.01.2016	

Gateway Client

- Retrieve OData services metadata
- Execute OData calls, review responses, troubleshoot issues



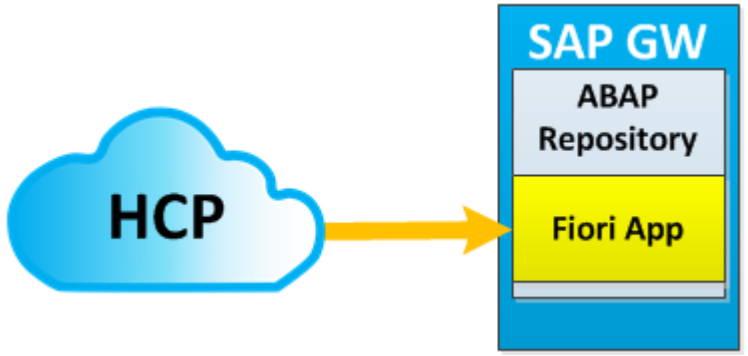
What We'll Cover

- GRC Access Control Fiori overview
- Business scenario for Fiori app extension
- Implementation: IDE setup
- Implementation: Fiori extension project
- Tracing and debugging
- Deployment
- Tips and tricks
- Wrap-up

Deploying Fiori App

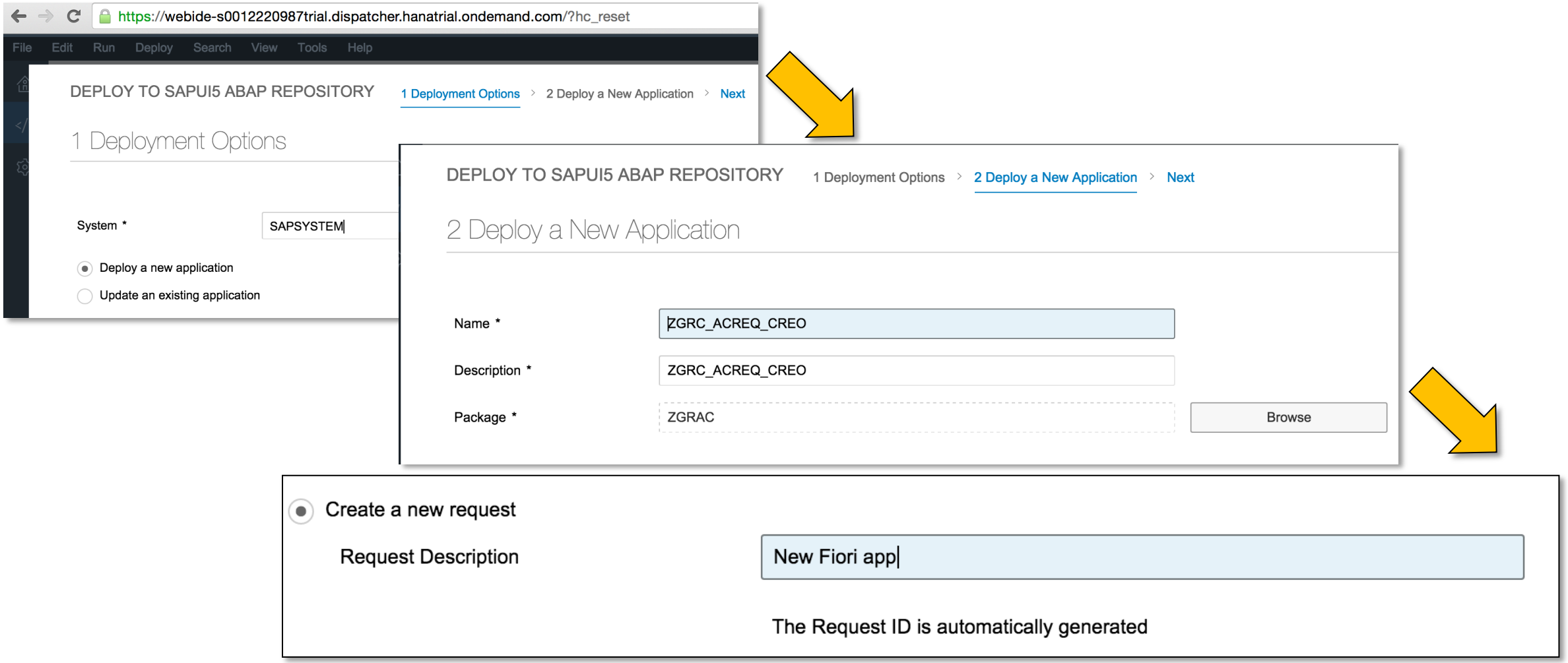
- Deploy app code to ABAP system
  - Direct Deployment to SAPUI5 ABAP Repository
  - Export/Import to SAPUI5 ABAP Repository

- Give users access to Fiori app
  - Navigation Design
  - User Permissions



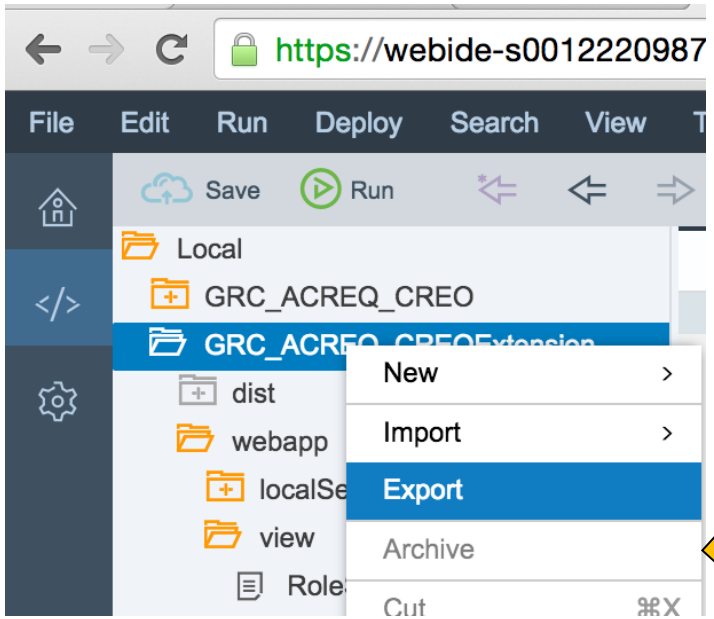
Direct Deployment to ABAP Repository

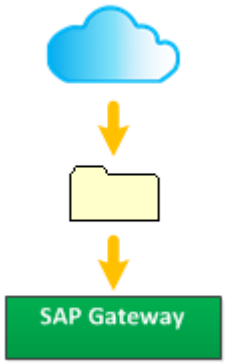
- ## Direct Deployment to SAPUI5 ABAP Repository

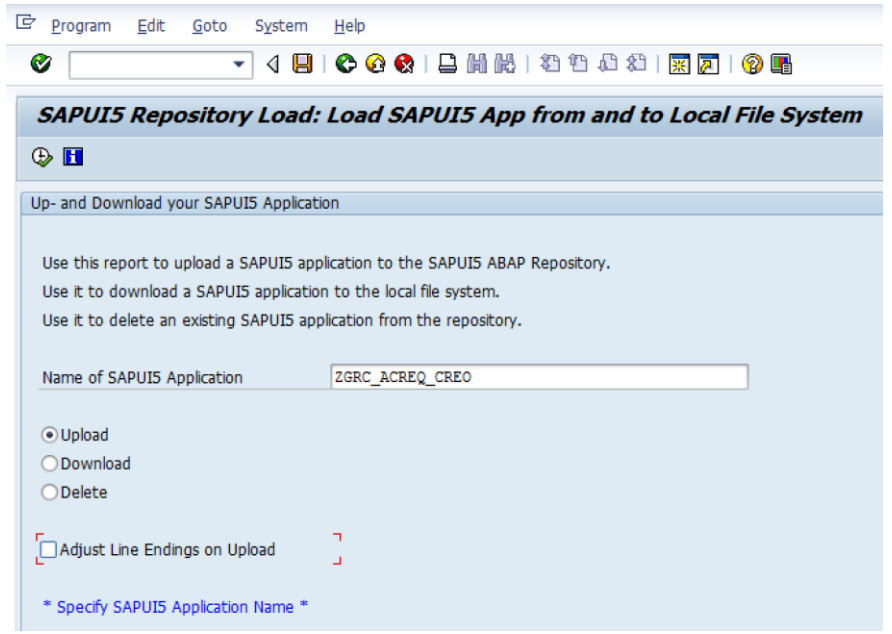


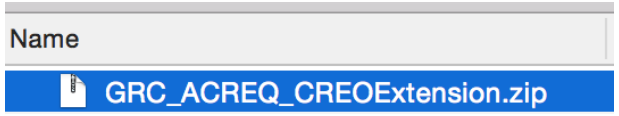
Export/Import to ABAP Repository

- Export from HCP
- Import via /UI5/UI5_REPOSITORY_LOAD report









Provide Access to Fiori App

- Define Semantic Object /UI2/SEMOBJ
- Define app alias in LPD_CUST

New Entries: Overview of Added Entries

Semantic Objects - Customer View

Semantic Object	Semantic Object Name	Semantic Object Description
ZAccessRequest	ZAccessRequest	Extended Access Request for Other

Change Launchpad - Role: UIGRC001 Instance: TRANSACTIONAL (EN)

New Folder | New Application | Add Separator | Delete | Copy from Other Launchpad | Link to a Repository Application

Customized Version	A...
GRC: Transactional Apps	Folder
Inactive Applications	Folder
Check Request Status	URL
Request access	URL
Access Request	URL
Analyze Risks	Web I
Maintain Role	Web I
Analyze Users	Web I
Analyze Roles	Web I
Analyze Risks	Web I
Approve Access Request	URL
Smart Reports	URL
Request access for others	URL
Z Request access for other	URL
Complaince approver	URL

Link Details
Link Text: Z Request access for other
Description:

Application Type
Application Type: URL

Application Parameter
URL: /sap/bc/ui5_ui5/sap/zgrc_acreq_creo

System
System Alias:

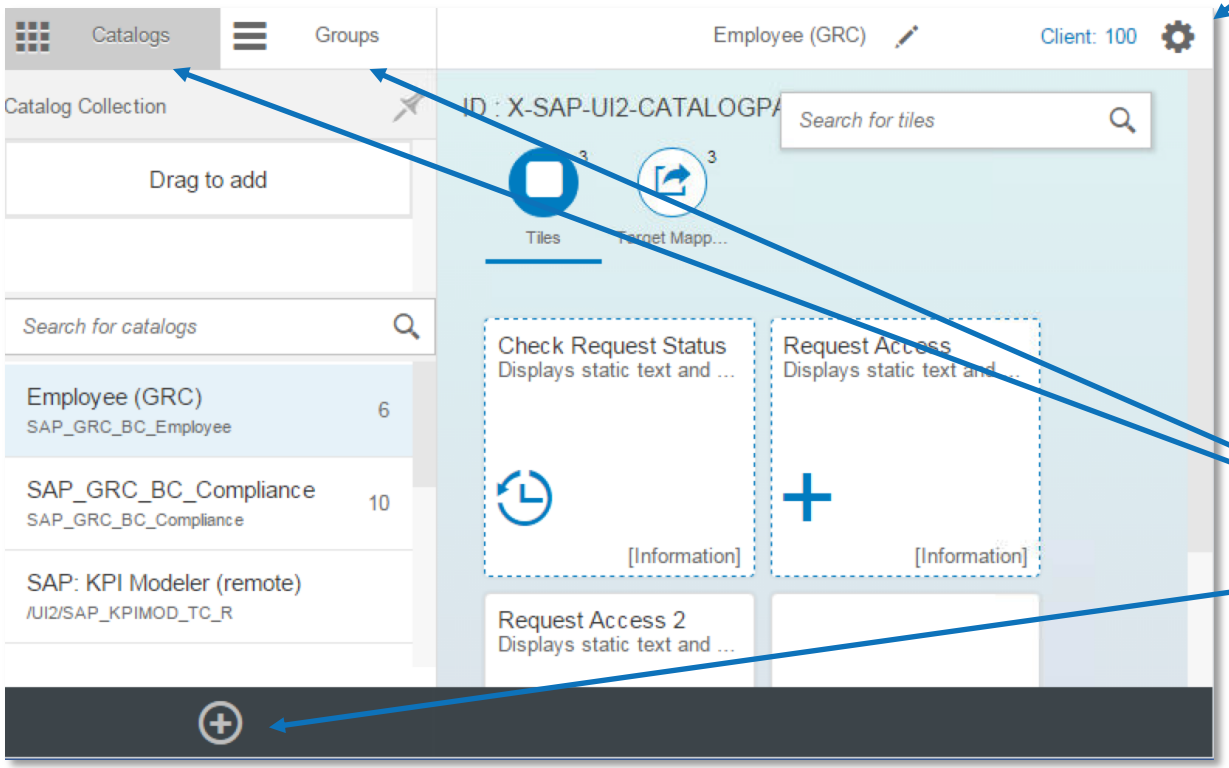
Hide Advanced (Optional) Parameters

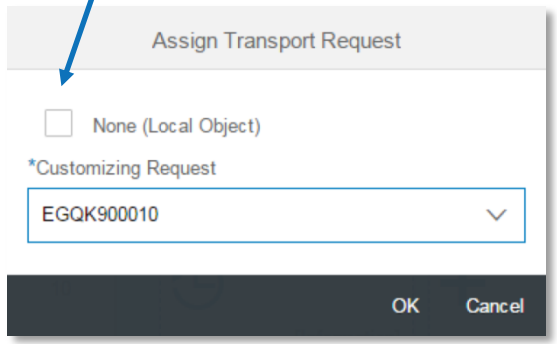
Advanced Parameters (Optional)
Application - Deactivation by User
Application Cannot be Removed from Launchpad

Application-Related Parameters
Application Alias: ZACCESSREQUESTO
Target App. Parameters:
Suspend/Resume
Proxy Class:
Additional Information: SAPUI5.Component=fcg.grc.acreq.creat...
FPM Event ID:

Provide Access to Fiori App (cont.)

- Define Catalogs and Groups
  - /sap/bc/ui5_ui5/sap/arsrvc_upb_admn/main.htm
- Create tiles, target mappings, add tiles to groups



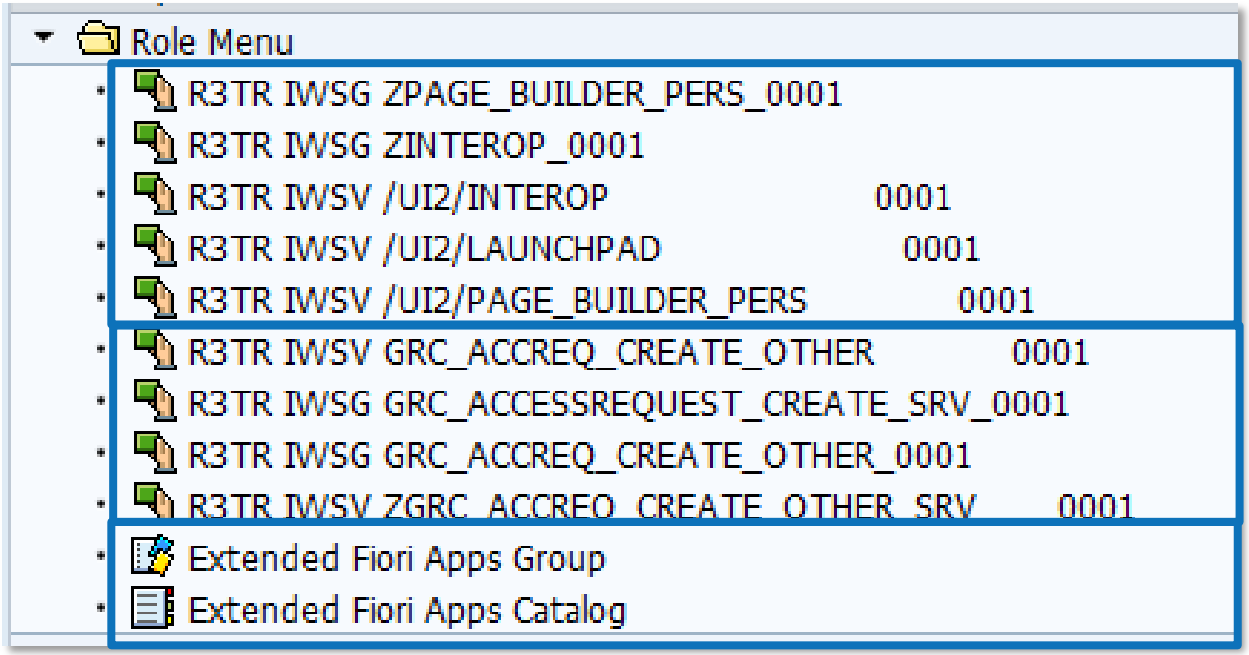


Make sure you assign transport request before configuration

Add Catalogs, Groups as needed

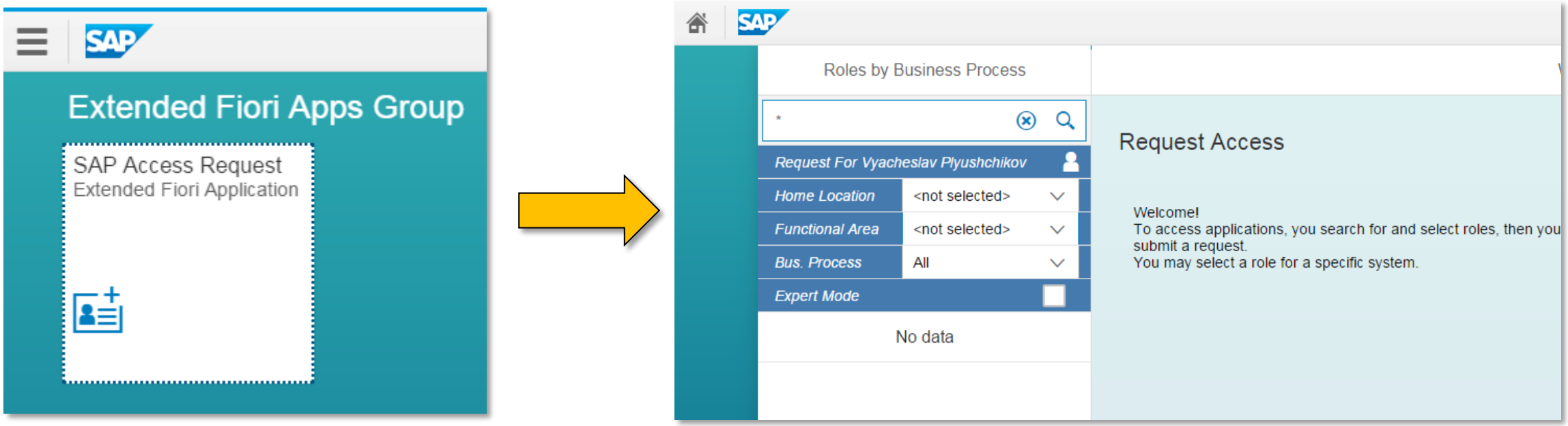
Provide Access to Fiori App (cont.)

- Define PFCG roles for Fiori Launchpad
  - Define access to catalogs, groups, OData services, required Fiori Launchpad services



Provide Access to Fiori App (cont.)

- Assign new role to users
- User can see new tile in Fiori Launchpad



Demo: Modifying and Deploying Fiori App

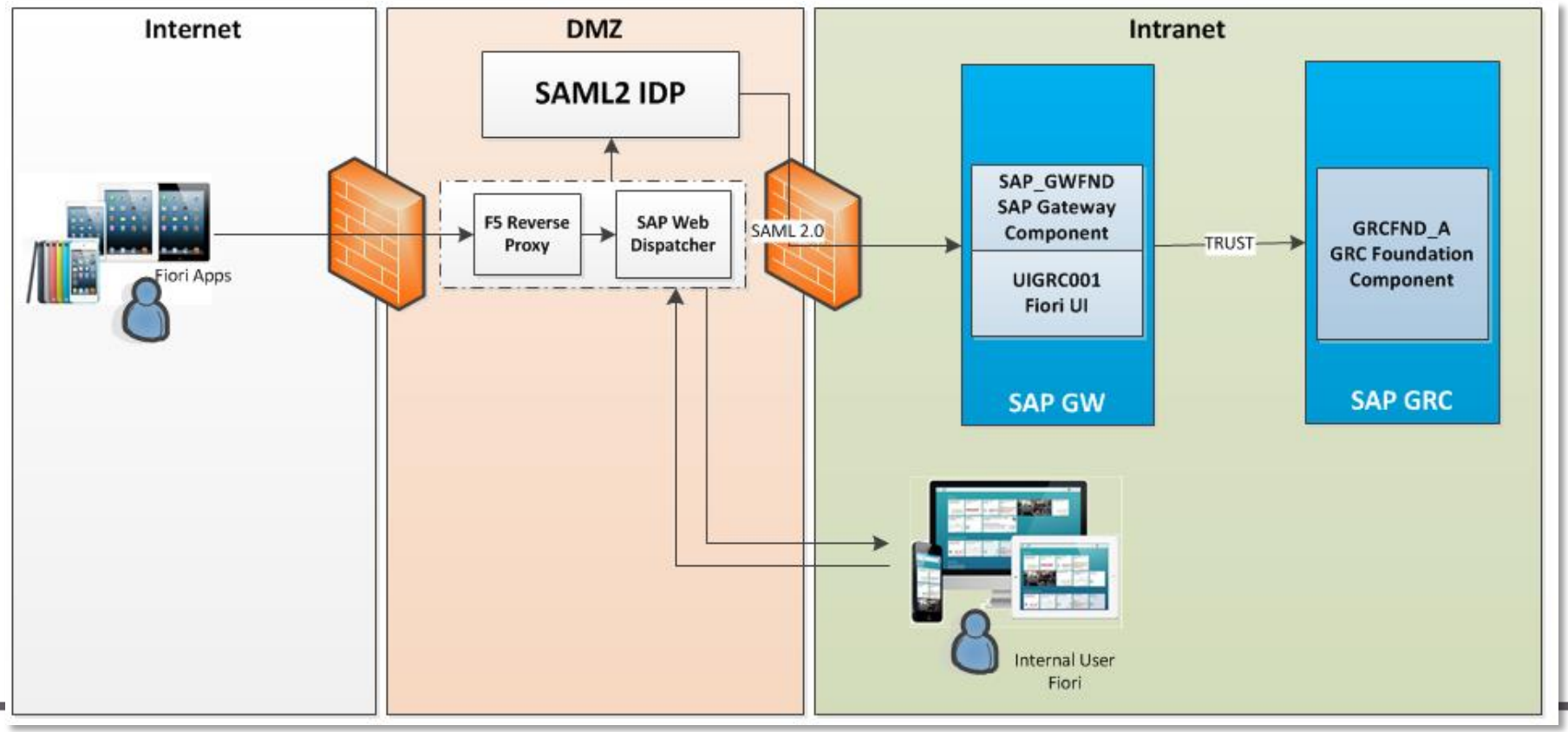
SAP Web IDE in Action

What We'll Cover

- GRC Access Control Fiori overview
- Business scenario for Fiori app extension
- Implementation: IDE setup
- Implementation: Fiori extension project
- Tracing and debugging
- Deployment
- Tips and tricks
- Wrap-up

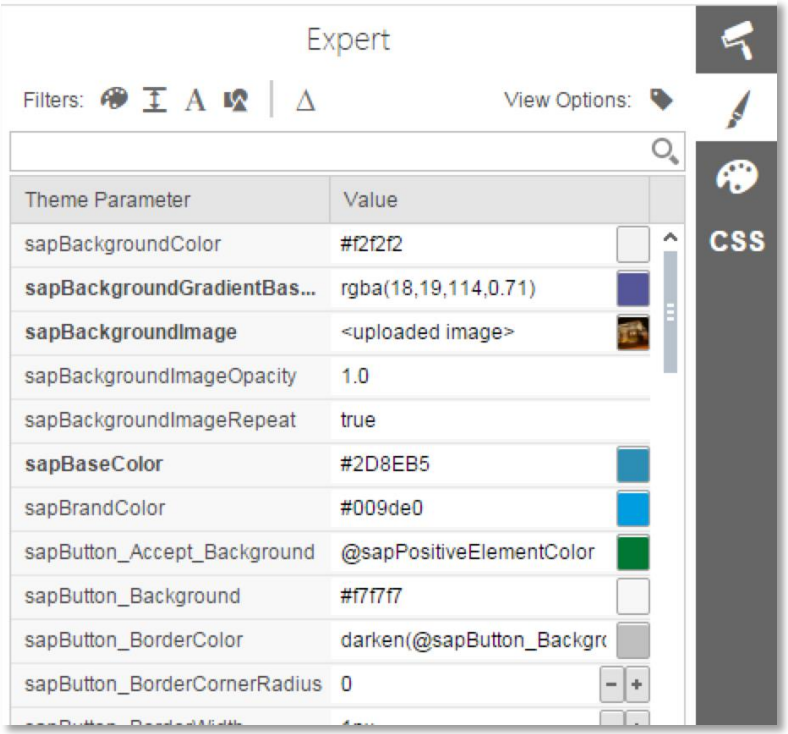
Single Sign-On

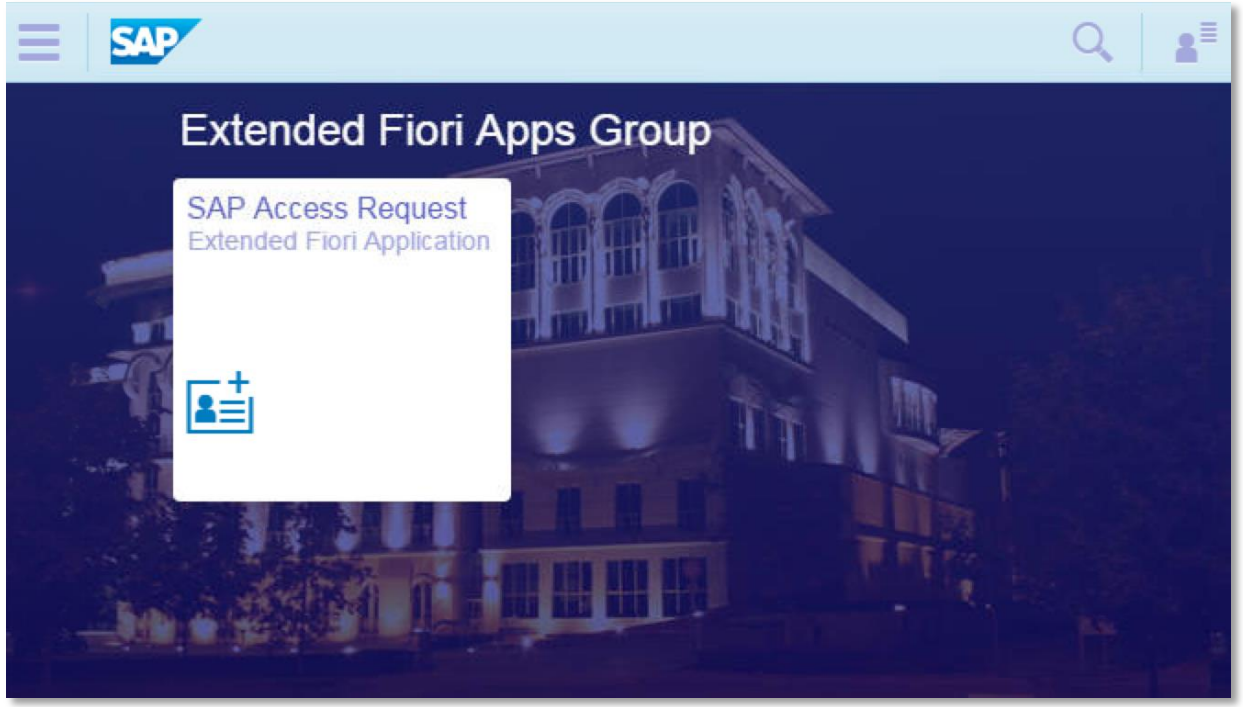
- Most common solution is based on SAML2
  - Uses HTTPS ports
  - Supports identity federation



Branding

- Theme Designer
  - /ui5/theme_designer
  - Copy existing theme to a new name and customize





What We'll Cover

- GRC Access Control Fiori overview
- Business scenario for Fiori app extension
- Implementation: IDE setup
- Implementation: Fiori extension project
- Tracing and debugging
- Deployment
- Tips and tricks
- Wrap-up

Where to Find More Information

- http://help.sap.com/grc-ac#section6
  - GRC Access Control: SAP Fiori apps documentation on the SAP Help Portal
- https://account.hanatrial.ondemand.com
  - SAP HANA Cloud Platform: registration, access to management cockpit
- https://sapui5.hana.ondemand.com
  - SAP UI Development Toolkit: SAPUI5/Fiori development
- http://help.sap.com/nwgateway#section7
  - SAP Gateway 2.0: SAP GW/OData services development on the SAP Help Portal
- http://advanced-view.com
  - Vyacheslav Plyushchikov's blogs on GRC Access Control and Fiori apps

7 Key Points to Take Home

- SAP Fiori apps for GRC AC can easily be extended
- SAP provides free HCP-based IDE for developing and extending Fiori apps
- Use design thinking approach: start from “better future” goal, not from analyzing current problems
- Reuse as much as possible, change only app parts, where new functionality is needed
- Keep the app “lightweight” to load faster on mobile devices, no big images or large data pre-loads
- Build Fiori apps for access from the Internet: secure it with HTTPS, web filters, identity federation authentication
- Use trace and debug tools for front-end and back-end issue resolution

Your Turn!

Questions?

How to contact me:
Vyacheslav (Slava) Plyushchikov
slava.plyushchikov@gmail.com

Please remember to complete your session evaluation

Disclaimer

Wellesley Information Services, 20 Carematrix Drive, Dedham, MA 02026